

Nevada County Bicycle Master Plan

July 2007



Adopted by the Nevada County Transportation Commission, July 18 2007

ACKNOWLEDGEMENTS

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1.0 INTRODUCTION

The Nevada County Bicycle Master Plan was prepared by Alta Planning + Design under contract to the Nevada County Transportation Commission. This Bicycle Master Plan is a result of the diligent efforts of the Nevada County Transportation Commission, Nevada County, the communities of Nevada County, including Grass Valley, Nevada City and Truckee, other public agencies and citizens interested in improving the bicycling environment in Nevada County. The Plan could not have been developed without the committed efforts of these organizations and residents.

This Plan has been prepared as a countywide document, but is also intended to guide efforts to improve bicycling conditions at the local level in the various communities of Nevada County. The Plan integrates the results of the general plan, the regional transportation plan and previous bicycle planning efforts.

1.1 Setting and Study Area

The study area includes all of Nevada County. The diverse topography and geography of Nevada County ranges from elevations of about 500 feet above sea level in the western end of the county to almost 8,000 feet above sea level at the eastern edge. West to east, the rolling hills of developed areas such as Grass Valley and Nevada City give way to the more and more rugged, mountainous terrain that characterizes areas such as Donner Pass which separates east and west county areas. The county is host to popular year-round recreation destinations that provide opportunities for snow sports, golfing, hiking, camping, fishing, rafting and road and mountain bicycling. The county is located near the Lake Tahoe area which lies to the east and south.

The densest residential areas in Nevada County are the incorporated communities of Grass Valley (pop. 12,050), Nevada City (pop. 3,000) and Truckee (pop. 15,000)¹. The major portion of the County's employment is centered in Grass Valley and Nevada City, with significant employment, including many recreation industry jobs, found near the Truckee area. However, of the total population of 96,100 only 30,050 (31%) live in the incorporated communities, while 66,050 (69%) live in the other unincorporated areas of the county, illustrating the essential rural nature of the county as a whole. The estimated population in 2004 was 96,100, a 4% increase over the 2000 Census, slightly lower than the national rate of growth of 5%.² In 2000 the Nevada County workforce of 27,711 residents had an average income of \$28,390. In 2003 there were 97,026 registered cars, trucks and motorcycles in Nevada County, 1,362 more registered motor vehicles than residents, indicating that the overwhelming majority of residents have access to a motor vehicle for either personal or work use.

The existing roadway network of Nevada County includes an estimated 958 miles of developed roads.³ Travel in the county is primarily by automobile due to the rural nature of the roadway network and limited opportunities for alternative modes of travel. The network is built around

¹ Nevada County Economic Resource Council 2005

² US Census 2000

³ Nevada County GIS data

Interstate 80 and several state routes, including Highways 49, 20, 174, 267 and 89. Depending on the segment, these state routes are classified as limited access highways, major or minor arterials or low-volume rural highways. In developed areas they connect with a system of collector and local streets. Western Nevada County is served by the Gold Country Stage which operates buses equipped with front bicycle racks. The Gold County State serves most of the population, employment and recreation centers in the western half of the county and connects to inter-county Greyhound bus service. The Town of Truckee is served by the Truckee Trolley and Truckee Dial-a-Ride, as well as the Tahoe Area Regional Transit (TART) service, which has a route that runs between Truckee and Tahoe City. Amtrak has a Truckee station. Currently bicycle parking is not available at transit stops or stations.

1.2 Why does Nevada County need a Bicycle Master Plan?

The County of Nevada has been growing slower than the State growth rate over the last several years. Traffic congestion is not yet the problem it is in other communities around the state. However, managing traffic is a key strategy for the growing communities of Nevada County to ensure they maintain their rural nature and community character. This Plan is one step in providing alternative modes and addressing future traffic congestion in the County.

In addition to reducing traffic congestion, encouraging cycling in the community will help increase the enjoyment and quality of life for the residents of Nevada County. Since bicycling is among the most popular forms of recreational activity in the United States (with 46 percent of Americans bicycling for pleasure), we can assume that thousands of County residents bicycle at least occasionally and will benefit from this Plan. When bicycling is available as a daily mode of transportation or recreation, substantial health benefits result. This is especially true for the older segment of the population who benefit most from such low-impact forms of exercise.

Finally, safety concerns are one of the primary reasons to improve bicycling conditions in Nevada County. Concerns about safety have historically been the single greatest reason people do not commute by bicycle, as captured in polls dating back to the early 1990's (Lou Harris, 1991). Addressing those concerns for bicyclists through physical and program improvements is another major objective of this Plan.

1.2.1 Funding Requirements

In order to qualify for State of California Bicycle Transportation Account (BTA) funding, local bicycle plans must meet the criteria of California Streets and Highways Code Sec 891.2, detailed in **Table 1-1** below. As of 2006, the amount of funding available to California communities through the BTA is only \$5 million statewide. Most communities will need to seek additional funding to implement the elements of their bicycle and pedestrian plans. There are no specific requirements for most other state and federal funding sources that this Plan must meet. However, having an adopted bicycle plan substantially improves the chances of securing funding for any project that is a part of that planning process.

Table 1-1: California Streets and Highways Code Section 891-2

| Required Plan Element | Location of Element in Nevada County BMP |
|--|---|
| (a) The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan. | Section 4 - Demand Analysis; Text, pages 4-8 to 4-10 |
| (b) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers. | Section 3 - Existing Conditions; Figure 3-1, page 3-5 |
| (c) A map and description of existing and proposed bikeways. | Section 3 - Existing Conditions; Figure 3-2, page 3-6; Text, pages 3-3 to 3-8 Section 5 - Proposed System; Figures 5-3, 5-4, 5-5, 5-6, pages 5-11 to 5-14; Text, pages 5-3 to 5-21 |
| (d) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers. | Section 3 - Existing Conditions; Figure 3-2, page 3-6; Text, pages 3-8 to 3-11 Section 5 - Proposed System; Figures 5-3, 5-4, 5-5, 5-6, pages 5-11 to 5-14; Text, page 5-20 |
| (e) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels. | Section 3 - Existing Conditions; Figure 3-2, page 3-6; Text, page 3-15 Section 5 - Proposed System; Figures 5-3, 5-4, 5-5, 5-6, pages 5-11 to 5-14; Text, page 5-20 |
| (f) A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities. | Section 2 - Goals, Objectives and Policy Actions; Text, page 2-5 Section 3 - Existing Conditions; Text, pages 3-8 to 3-11 |
| (g) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists. | Section 3 - Existing Conditions; Text, page 3-4 Section 5 - Proposed System; Text, pages 5-21 to 5-25 |
| (h) A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support. | Section 1 - Introduction; Text, page 1-5 |
| (i) A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting. | Section 1 - Introduction; Text, page 1-4 Section 2 - Goals, Objectives and Policy Actions; Text, pages 2-1 to 2-3 |
| (j) A description of the projects proposed in the plan and a listing of their priorities for implementation. | Section 5 - Proposed System; Text, pages 5-3 to 5-21 Section 6 - Implementation; Text, pages 6-1 to 6-10 |
| (k) A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area. | Section 3 - Existing Conditions; Text, pages 3-3 to 3-11 Section 6 - Implementation; Text, pages 6-1 to 6-10 |

1.3 Role of the Bicycle Master Plan

The Nevada County Bicycle Master Plan is primarily a countywide coordinating and resource document for the City of Grass Valley, Nevada City, Truckee and the unincorporated County areas. The Plan focuses on developing a complete countywide network of bikeways, as well as programs, and specific policies and enhancements. In addition, the plan provides specific recommendations for the incorporated areas of Grass Valley and Nevada City and references the 2007 update of the Town of *Truckee Trails and Bikeways Plan*, as appropriate. The Plan helps to promote safe access to popular destinations countywide and ensure the development and application of consistent design standards. Key goals of the Plan are to provide consistency with other plans as well as to promote the critical aspect of policy integration and coordination with the County Department of Public Works and the County Planning Department, to ensure that projects proposed in this Plan can be funded and implemented in a timely fashion.

The Town of Truckee adopted an updated local bicycle master plan in the Spring of 2007. The Town's Plan provides detailed local infrastructure, policy and program recommendations. The Town of Truckee's eligibility for funding will be determined primarily based on the adoption and approval of their local bicycle plan. Nevertheless, the Town should consider officially adopting the *2007 Nevada County Bicycle Master Plan* as a countywide bicycle planning document.

To the extent feasible, this Plan has incorporated existing local plans, priorities and policies as part of its recommendations. Plans reviewed include:

- *Nevada City General Plan (1980-2000)*
- *Nevada County Bicycle Master Plan (1989)*
- *Nevada County Bicycle Master Plan Update (1996)*
- *City of Grass Valley 2020 General Plan (1999)*
- *Nonmotorized Transportation Plan for Nevada County (2000)*
- *Nevada County General Plan (1995)*
- *Caltrans District 3 Bicycle Strategy Focus Groups Final Report (2003)*
- *California Cross State Bicycle Route Study (2004)*
- *City of Grass Valley Parks & Recreation Master Plan Update (2004)*
- *Nevada County Regional Transportation Plan (2005)*
- *Wolf Creek Parkway Master Plan (2006)*
- *Truckee General Plan (2006)*
- *Town of Truckee Trails and Bikeways Plan (2007)*

A more detailed review of past planning efforts is found in Chapter 2.

By adopting this document, the County, Grass Valley and Nevada City will meet State and Federal requirements for the projects identified in this Plan. All projects in this Plan will require additional feasibility, design, environmental, and/or public input prior to being funded and constructed. All projects and plans would need to conform with local General Plans & EIRs as well. Regardless of their adoption of this plan as a countywide bicycle planning document, the Town of Truckee's *Truckee Trails and Bikeways Plan, 2007* would continue to be the authoritative document regarding proposed facilities, policies and programs within the Town of Truckee.

1.4 Bicycle Plan Process

This Plan was developed during 2006/2007 under the purview of the Nevada County Transportation Commission (NCTC). NCTC is the Regional Transportation Planning Agency (RTPA) for the County of Nevada, the City of Grass Valley, Nevada City and the Town of Truckee. NCTC's initial public outreach included an online user survey of bicycle and pedestrian conditions and needs. To engage residents in the production of this Plan, NCTC hosted two public meetings – one in Truckee for the eastern portion of the county and one in Grass Valley for the western portion of the county. Notes from those meetings can be found in Appendix D. In addition, NCTC solicited input from agency staff members in the planning, public works and recreation departments in Grass Valley, Nevada City and Truckee.

1.5 Overview of the Plan Structure

This report is divided into sections, detailed below:

Section 1 – Introduction: Sets the context for the Plan including purpose and structure.

Section 2 - Goals and Objectives: Summarizes the goals, policies, and objectives guiding the implementation of the Master Plan, incorporating previous planning efforts.

Section 3 – Existing Conditions: Details the existing bikeway and walkway facilities in Nevada County.

Section 4 – Demand Analysis: This chapter reviews the relationship between bicycle activity, commute patterns, demographics, land use and collisions.

Section 5 – Proposed System: Outlines the recommended bikeway improvements, including bicycle parking, and education, outreach and encouragement programs.

Section 6 – Implementation: Outlines an implementation strategy, including feasibility analyses and costs estimates for proposed projects. Funding sources are included in this chapter.

Appendix A – Design Guidelines

Appendix B – Sample Bicycle Parking Code Language

Appendix C – Town of Truckee Trails and Bikeways Plan Map

Appendix D – Public Workshop Meeting Notes

Appendix E – Basis for Cost Estimates

2.0 GOALS, OBJECTIVES AND POLICY ACTIONS

2.1 Relationship to Other Plans and Policies

This section summarizes past planning efforts and establishes a policy framework to guide future transportation decisions and capital improvement programming for both unincorporated Nevada County and its incorporated cities and towns. This undertaking is intended to promote regional planning, offer opportunities to coordinate infrastructure improvements and to incorporate past planning efforts into the current Plan. It is recommended that all the jurisdictions of Nevada County, including Nevada County, Grass Valley, Nevada City and Truckee, adopt the recommended policies in this Plan to ensure their effective and consistent implementation countywide.

2.1.1 Previous Nevada County Plans

The Bicycle Master Plan is intended to coordinate and guide the provision of all bicycle-related plans, programs, and projects in the County. The studies or planning efforts listed below have been reviewed and consulted, studied for consistency, and where appropriate, folded into the Nevada County Bicycle Master Plan. Each plan summary addresses relevant goals, objectives and policies as well as a summary of previous infrastructure and program proposals.

Nevada County Bicycle Master Plan (1989)

The 1989 Bicycle Master Plan established a blueprint for developing a bikeway system that includes both on-street and off-street facilities as well as support facilities and programs throughout the County. The plan contains goals, objectives and policies as well as establishing bikeway designations, analyzing available data and summarizing potential funding sources.

Nevada County General Plan (1995)

The purpose of this plan is to meet state planning requirements and to assist decision makers in coordinating land use and infrastructure decisions. The Circulation, Conservation/Open Space, Recreation and Community Design elements all contain policies relevant to the bicycle plan update's goals of developing bicycle facilities, multi-modal connections and connections between neighborhoods and communities.

Nevada County Bicycle Master Plan Update (1996)

This plan was completed as a required update to the 1989 Nevada County Bicycle Master Plan. The document provides current information required to maintain eligibility for Bicycle Transportation Account funding, including current and future usage, existing and proposed facilities and programs

and updated cost estimates. Elements of this plan are folded into the current Plan update such as safety and education programs and proposed programs and projects.

City of Grass Valley 2020 General Plan (1999)

The purpose of this plan is to meet state planning requirements and to assist decision makers in coordinating land use and infrastructure decisions to promote economic growth and development in Grass Valley and the surrounding unincorporated areas. The Circulation, Recreation and Community Design elements all contain policies relevant to the bicycle plan update. In addition, the plan calls for specific improvement types such as trails, pathways, lanes and routes.

Nonmotorized Transportation Plan for Nevada County (2000)

The purpose of this plan was to supplement the 1996 Nevada County Bicycle Master Plan. The plan provides a framework of Commute, Safe Routes to Schools, Sidewalk and Rural Recreational Trails facility types. Included in the plan are specific commute corridors identified for further study and evaluation, including corridors through open space where additional right-of-way and easements would be required.

Caltrans District 3 Bicycle Strategy Focus Groups Final Report (2003)

Caltrans conducted a series of focus groups intended to provide information regarding the issues and concerns of potential cyclists and what keeps these people from bicycling. Specific, respondents were asked about bicycle use, conditions of existing routes on state highways and expectations about future use. The Nevada County session was held in Auburn and resulted in comments about bicycling conditions in the Grass Valley area and about state highway conditions in general.

California Cross State Bicycle Route Study (2004)

This planning document was developed by the El Dorado County Transportation Commission and describes a potential cross state route composed of existing and proposed bicycle paths, lanes and routes. Elements of this plan were adapted for use in the route connecting the east and west portions of the county around Highway 20/Interstate 80 in the Yuba Gap area.

City of Grass Valley Parks & Recreation Master Plan Update (2004)

To assist in maintaining Grass Valley's livability, the Parks and Recreation Commission and the City created the first Grass Valley Parks and Recreation Master Plan. The Master Plan describes how the City will provide parks and recreation opportunities to residents on a 20-year timeline. The plan identifies bicycle-related goals, policies and proposals from the City of Grass Valley 2020 General Plan.

Nevada County Regional Transportation Plan (2005)

This plan was adopted to bring Nevada County into compliance with California Transportation Commission 1999 Regional Transportation Plan guidelines. Its purpose is to guide development of

the County's transportation system and lays out policies and actions intended to address all modes, including roadways, public transit, goods movement, bicycle and pedestrian needs, aviation and transportation system management. The plan includes a number of goals pertaining to non-motorized transportation designed to promote safety on local roads and state highways and encourage a multi-modal transportation system including bicycling, walking and transit as integral elements.

Wolf Creek Parkway Master Plan (2006)

The Wolf Creek Parkway Alignment Study and Conceptual Master Plan establishes potential routing for a multi-use non-motorized trail along the Wolf Creek Corridor, provides guidelines for design development, and outlines alternative strategies for implementation. The multi-use non-motorized trail is intended to promote alternative forms of transportation and provide new recreational opportunities consistent with the goals set forth in the City of Grass Valley's General Plan, Streetscape Master Plan, Downtown Strategic Plan, and Parks and Recreation Master Plan.

Truckee General Plan (2006)

The Truckee General Plan describes existing conditions for cycling in Truckee and discusses the possible impacts on bicycling as a result of the implementation of the general plan. It references the Truckee Trails and Bikeways Plan as a guiding document to avoid negative impacts on bicycling conditions in the process of local development. The plan also encourages the development and implementation of a non-motorized system promoting the use of alternative transportation and creating recreational opportunities for the Truckee community and beyond.

Town of Truckee Trails and Bikeways Plan (2007)

This bikeways plan was a community-based planning effort promoting the development of a local multi-use trail and bikeway system designed to increase recreational, educational and alternative transportation opportunities for the benefit of local residents and visitors to the Truckee area. The proposed system would link the Town's historic downtown, residential and commercial areas, and recreational, educational, natural and historical resources and plan for connections to regional public lands and trail and bikeway systems.

2.1.2 Relevant State Legislation

The California Bicycle Transportation Act (1994) requires that all cities and counties should have an adopted bicycle master plan to be eligible for BTA funding and the *Caltrans Highway Design Manual* contains specific, mandatory design requirements. The Caltrans requirements – and how this Plan complies with them for Nevada County – are detailed in Table 1-1. 'Chapter 1000: Bikeway Planning and Design' of the Manual sets the basic design parameters of on-street and off-street bicycle facilities and is summarized in Appendix A.

2.2 Goals, Objectives and Policy Actions

Goals provide the context for the specific objectives and policy actions discussed in the bicycle plan. The goals provide the long-term vision and serve as the foundation of the plan. Goals are broad statements of purpose, while policy actions provide a bridge between more general goals and specific implementation guidelines, which are provided in the proposed projects and programs. The policies proposed here are not proscriptive and have no fees or specific penalties associated with noncompliance. Rather, they are intended as guidance for the development, funding and implementation of future bikeways in Nevada County.

2.2.1 Goals, Objectives and Policies

The following goals, objectives and policies are proposed for adoption as a part of the Bicycle Master Plan.

Goal 1: **Provide safe and efficient bikeways in Nevada County**

Objective: Construct bikeways identified in the Nevada County Bicycle Master Plan and provide for the maintenance of both existing and new facilities.

Policies

- 1.1 Prepare and maintain a bicycle master plan that identifies existing and future needs, and provides specific recommendations for facilities and programs including adequate provisions for bicycle use and bikeways in all new developments.
- 1.2 Create a bikeway system that is cost-effective to construct and maintain; respects landowners, utilities, and special districts' property rights; and minimizes the potential for conflicts with other types of vehicles and users.
- 1.3 Require all bikeways to conform to design standards contained in the latest version of the Caltrans Highway Design Manual and CA MUTCD
- 1.4 Coordinate with agencies such as Placer County, Yuba County, Sierra County, Caltrans, City of Grass Valley, Nevada City, Town of Truckee and Nevada County regarding the implementation of the proposed system.

Goal 2: **Include bikeway facilities in all appropriate future and development projects to facilitate on-site circulation for bicycle travel, on-site bicycle parking, and connections to the proposed system.**

Objective: Maximize the number of daily trips made by bicycling in future development areas.

Policies

- 2.1 Require future development to construct bikeways included in the proposed system as a condition of development.

- 2.2 Encourage future commercial development to provide bicycle access to surrounding residential areas.
- 2.3 Require future commercial development to place bike racks near entrances for employees and customers.
- 2.4 Consider landowner concerns when planning and acquiring off-street bikeway easements.
- 2.5 Meet the requirements of the Americans with Disabilities Act when constructing facilities contained in the proposed system, where applicable.
- 2.6 Encourage future development to consider schools as important destinations for bicyclists when designing circulation systems within new developments.

Goal 3: Develop a bikeway system that enhances safety and convenience of bicycling to work and school.

Objective: Increase bicycle trips to work and school to reduce vehicle congestion and improve air quality.

Policies

- 3.1 Provide connections to the proposed system from all existing and future transit facilities, stations, and terminals in Nevada County.
- 3.2 Provide support facilities such as bicycle racks, personal lockers, and showers at appropriate locations such as “park and ride” facilities, employment centers, schools, and commercial centers.

Goal 4: Educate and inform all residents and visitors of Nevada County about how to use bikeway facilities safely.

Objective: Improve bicycle conditions in Nevada county by reducing accidents and increasing the number of bikeway system users.

Policies

- 4.1 Incorporate standard signing and traffic controls as established by Caltrans to ensure a high level of safety for the bicyclist and motorist.
- 4.2 Use available accident data to monitor bicycle-related accident levels annually, and target a 10 percent reduction on a per capita basis over the next twenty (20) years.
- 4.3 Encourage local law enforcement agencies and local school districts to cooperatively develop a comprehensive bicycle education program that is taught to all students, in Nevada County, including through Driver’s Education classes.

Goal 5: **Avoid adverse environmental impacts associated with the implementation of the proposed system.**

Objective: Mitigate potentially significant impacts to a level of less than significant.

Policies

- 5.1 Conduct environmental review consistent with the California Environmental Quality Act for individual projects as they advance to the implementation stage of development.
- 5.2 Avoid areas of sensitive habitats for plants and wildlife when constructing facilities contained in the proposed system.
- 5.3 Solicit and consider community input in the design and location of bikeway facilities.
- 5.4 Consider the effect on other transportation facilities such as travel lane widths, turn lanes on-street parking and on-site circulation when planning and designing on-street bikeways

Goal 6: **Ensure the timely funding and construction of the bicycle improvements described in this plan**

Objective The County should work to fund construction of the bicycle improvements in this plan and maximize the amount of local, state, and federal funding for bikeway facilities that can be received by agencies in Nevada County.

Policies

- 6.1 Develop a method for reserving some portion of Local Transportation Funds to construct improvements described in this plan.
- 6.2 Maintain current information regarding regional, state, and federal funding programs for bikeway facilities along with specific funding requirements and deadlines.
- 6.3 Partner with other agencies to pursue funding for bicycle projects as stand-alone grant applications or as part of larger transportation improvements.

Objective: The County should develop and construct the improvements in this plan in a timely fashion

Policies

- 6.4 Environmental documentation, right of way acquisition and plans, specifications and detail cost estimates should be developed as soon as adequate funding is available
- 6.5 Projects should be constructed as soon as adequate funding is available to avoid escalation and cost overruns

Goal 7: **Ensure the effectiveness and longevity of the plan policies, projects and programs**

Objective: The County should require that the policies, programs and projects of the Bicycle Master Plan be integrated into all ongoing and future planning and design documents and guidelines

Policies

- 7.1 Update local roadway design standards to include sufficient pavement sections to accommodate bikeway facilities
- 7.2 Require inclusion of all bicycle improvements from this plan in upcoming capital projects, where appropriate
- 7.3 Require inclusion of Bicycle Plan policies, programs and improvements in all ongoing and future planning efforts, as applicable

3.0 EXISTING CONDITIONS

Existing conditions in Nevada County include existing facilities for bicycling as well as safety, education and encouragement programs. In addition, this chapter places the existing facilities and programs in a land use context by summarizing major destinations. As described in the introduction to this Plan, Nevada is primarily a rural county with few existing facilities for bicycling but with a growing demand for safe recreational and transportation options to bike. Agency staff and the public have identified the lack of facilities including pathways, wide road shoulders, safe routes and bicycle parking as a key concern.

3.1 Major Destinations

There are several major destinations and areas of bicycle activity within Nevada County. They are briefly described below. Improvements to these areas are detailed in Chapter 5. See **Figure 3-1** for a land use map of Nevada County.

3.1.1 Grass Valley

Located along Highway 49 near the southern intersection with Highway 20, the greater Grass Valley area is home to approximately 63 of western Nevada County's top 84 major employers. Major shopping and commercial destinations include the downtown area shops and restaurants on and around East Main Street as well as the Brunswick Basin shopping Center on Brunswick Road, the Pine Creek Shopping Center on Freeman Lane, the Grass Valley Center on McKnight Way, the Fowler Center on Nevada City Highway, the Glenbrook Center off Highway 49/20, the Gold Country Center off Sutton Way and others. Public and private educational destinations include approximately 9 elementary schools and 5 high schools including Nevada Union High School. Higher learning destinations include Sierra College eastern Nevada County Campus. Destinations for recreation in the Grass Valley area include Empire Mine State Park, neighborhood parks such as Condon Park, the Nevada County Country Club, the Nevada County Fairgrounds and various hiking and mountain bike trails.

3.1.2 Nevada City

Located along Highway 49 near the northern intersection with Highway 20, the greater Nevada City area is home to approximately 14 of western Nevada County's top 84 major employers. Nevada City is the location of the Eric Rood Government Center, off Highway 49, where most County government departments are located as well as the county jail and main library. Shopping and commercial destinations are located in and around the historic downtown area on Commercial and Broad Streets as well as at the Seven Hills Center on Zion Street and others. Public and private educational destinations include approximately 9 elementary/middle schools. Destinations for recreation in the Nevada City area include neighborhood parks such as Pioneer Park, hiking and

mountain bike trails as well as the nearby Yuba River, a regional destination for mountain biking and whitewater rafting.

3.1.3 Truckee

Located on Interstate 80 at the intersection with Highway 89, at the eastern end of the county, the greater Truckee area encompasses the Donner Pass/Donner Lake area and many outdoor recreation opportunities for on-road and off-road bicycling. Truckee is a major destination for visitors from outside the county, with many seasonal and vacation homes in the area. Local educational destinations include approximately 8 elementary and middle schools as well as three high school locations, including Tahoe Truckee High School. The Sierra College Tahoe/Truckee extension is located in Truckee. The greater Truckee area is home to golf courses, state and regional parks and numerous downhill and cross-country snow sports facilities. The recreation industry is a key source of employment for Truckee residents and constitutes many of the employment destinations in the town.

3.1.4 Other Unincorporated Community Areas

There are a number of less-populated unincorporated community areas in western Nevada County, such as Alta Sierra, Chicago Park, Lake of the Pines, Bitney Springs, Lake Wildwood, San Juan Ridge and Penn Valley. There are approximately 16 elementary/middle schools and 8 high schools in these communities, including public and private schools. Gated communities such as Lake Wildwood and Lake of the Pines are destinations for service industry workers and for residents and their visitors utilizing the lakes and golf courses offered for private use. In addition, both of these areas have public destinations, respectively, the Wildwood Center on Pleasant Valley Drive and the Higgins Village and Lake Center shopping areas both on Combie Road. Penn Valley is home to a small shopping and employment area centered at the intersection of Penn Valley Drive and Spenceville Road. Although employment destinations in other outlying communities are more limited than in the more populous areas, there is substantial seasonal recreational employment in some areas along the Yuba River Valley.

3.1.7 Parks, Open Space and Recreation

Recreational cycling and access to open space by and for bicycle use have been identified by county residents as high priorities. Many scenic road cycling routes throughout the county are not just a route between destinations but rather are destinations in themselves. Examples are Bitney Springs Road, Penn Valley Road and Rough and Ready Highway. In the eastern part of the county, Donner Pass Road west of Truckee is an example of a challenging preferred recreational road cycling route. Specific trailhead access areas for off-road mountain biking are found throughout the County in such locations as Empire Mine State Park south of Grass Valley and in the state and federal lands in the Truckee area. In addition, local cyclists have identified numerous “caches” of informal, unofficial trails throughout the developed and developing areas of the County. The bikeway improvements included in Chapter 5 identify routes that, in addition to their transportation function, allow visitors to safely and conveniently bicycle to destinations for mountain biking and hiking as well as enjoying safer recreational road riding.

3.2 Bicycle Facilities

3.2.1 Existing Bikeways

The existing Nevada County bikeway system consists of an incomplete system of approximately 7.4 miles of bikeways, including approximately 3 miles of Class I multi-use pathways and 4.4 miles of Class II bicycle lanes (see **Table 3-1**). Class I multi-use paths must meet specific width, clearance, curve radii, gradient, and other requirements, while Class II bike lanes and Class III bike routes must meet specific striping, signing and other requirements. Off-street paved paths do not necessarily need to meet Caltrans standards but should not be identified as Class I paths on maps or plans unless they meet the applicable state highway code standards. More details on Class I, II and III facility types are provided in the following section. The design guidelines provided in Appendix A of this Plan should help ensure consistency with accepted state and national standards.

Many rural roads in Nevada County are narrow and winding and some have high seasonal traffic volumes, shoulders of varying width, and some steep sections. Application of Caltrans bikeway designs in these areas may be difficult due to limited right of way and issues with difficulty of construction. Chapter 5 and Appendix A: Design Guidelines provide some strategies for addressing these problematic areas.

See **Figure 3-2** for a map of the bikeway network in Nevada County, including existing bikeways. Table 3-1 provides a summary of existing bikeways and **Table 3-2** details existing bikeway segments. Figure 3-2 shows existing and proposed bikeways. Note that existing facilities do not include Town of Truckee. For information on Town of Truckee existing facilities, please see the 2007 update of the Town of Truckee Trails and Bikeways Plan and Appendix C.

Table 3-1: Nevada County Existing Bikeways Summary

| Bikeway Type | Miles |
|---------------------|--------------|
| Class I Existing | 3.0 |
| Class II Existing | 4.4 |
| Class III Existing | 0.0 |
| Total | 7.4 |



Legend

- Exotic (EXT)
- Rural (RUR)
- Residential (RES)
- Urban Single-Family Density Residential (USF)
- Urban Medium Density Residential (UMD)
- Urban High Density Residential (UHD)
- Business Park (BP)
- Rural Commercial (RC)
- Neighborhood Commercial (NC)
- Community Commercial (CC)
- Highway Commercial (HC)
- Office-Professional (OP)
- Green Valley (GRV), Nevada City (NEVCITY), Truckee (TRUCKEE)
- Industrial (IND)
- Planned Development (PD)
- Planned Residential Community (PRC)
- Special Development Area (SDA)
- Public (PUB)
- Recreation (REC)
- Open Space (OS)
- Forest (FOR)
- Wetland Area (WA)
- Communities

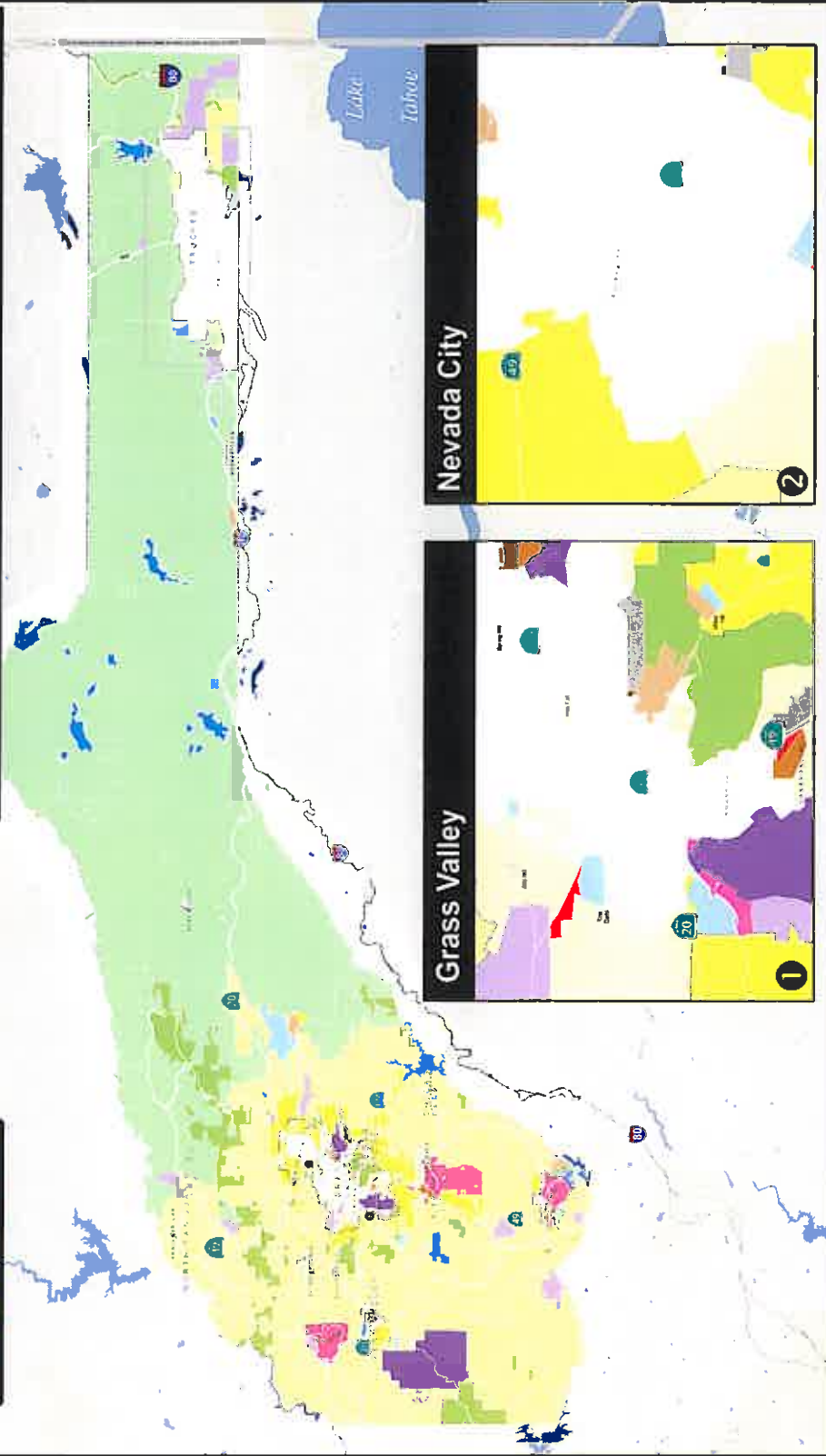


Figure 3-1

Nevada County California Land Use Map

Map Prepared: April, 2007 by Alta Planning + Design Data Provided by Nevada County, CA, Caltrans, & ESRI
 Proj: NAD03 - CA State Plane II



Project Area



Sierra County

See Truckee Trails & Bikeways Plan Map

Placer County

NEVADA CITY
See Zoom

GRASS VALLEY
See Zoom

SENN VALLEY

MECCA

LAUREL

LAUREL

LAUREL

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- Existing Class I Paved or Multi-Use Pathway
- Proposed Class I Paved or Multi-Use Pathway
- Existing Class II Bike Lanes
- Proposed Class II Bike Lanes or Wider Shoulders
- Existing Class III Bike Routes
- Proposed Class III Bike Routes
- Bicycles Prohibited on State Route
- Existing (Fully or Partially Constructed) Recreation Trail
- Existing or Proposed Recreation Trail
- Tahoe Pyramed Trail - Proposed
- StreetMap
- Rail Lines
- Parks & Open Space
- Stu Areas
- Transit Routes
- Transit Stops
- Bicycle Parking



Figure 3-2
Nevada County California Bikeway Plan

0 5 10 20 Miles

Table 3-2: Existing Nevada County Bikeways*

| SEGMENT NAME | FROM | TO | Bikeway Class | Area | Miles |
|--|----------------------|----------------------|---------------|--------------------------|-------|
| Litton Pathway | Hughes Road | Sierra College Drive | I | Grass Valley | 0.6 |
| Magnolia School Pathway | Lakeshore North | Kingston Lane | I | Lake of the Pines | 0.8 |
| Mount Olive Pathway | Lower Colfax Road | Mountain Lion Road | I | Nevada County | 0.8 |
| Penn Valley Pathway | Spenceville Road | Horton Street | I | Penn Valley | 0.8 |
| Total Existing Class I/Multi-Use Pathway | | | | | 3.0 |
| Ridge Road | Alta Street | Zion Street | II | Grass Valley/Nevada City | 3.1 |
| East Main Street/Nevada City Highway | Hughes Road | Manor Drive | II | Nevada City | 0.7 |
| Nevada City Highway | Banner Lava Cap Road | Ridge Road | II | Nevada City | 0.4 |
| Idaho-Maryland Road** | Springhill Drive | Railroad Avenue | II | Grass Valley | 0.4 |
| Total Existing Class II | | | | | 4.6 |
| Total Existing Class III | | | | | 0.0 |
| Grand Totals | | | | | 7.7 |

* See Truckee Trails and Bikeways Master Plan, 2007 for information on existing bikeways in Town of Truckee.

**Bike lane currently exists on one side of street only.

3.2.2 Bikeway Design

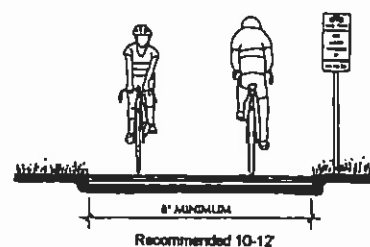
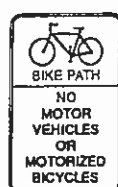
The three types of Bikeways described by Caltrans in Chapter 1000 of the Highway Design Manual are as follows.

Class I Bikeway - Typically called a bike path, provides for bicycle travel on a paved right of way completely separated from any street or highway. If a pathway is to be used primarily for recreation use and not with transportation funding, it may be constructed to reflect local conditions and needs.

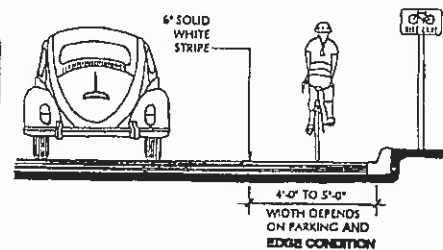
Class II Bikeway - Referred to as a bike lane. Provides a striped and stenciled lane for one-way travel on a street or highway.

Class III Bikeway - Referred to as a bike route. Provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing.

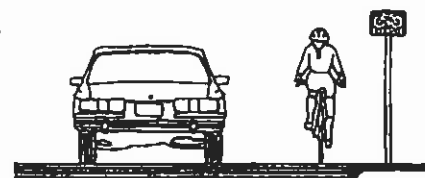
Class I Bike Path



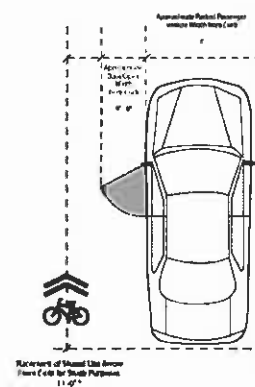
Class II Bike Lane



Class III Bike Route



Shared Roadway Bicycle Marking – Referred to as “Sharrows” Shared Roadway Bicycle Markings were adopted by Caltrans for use in areas where lane widths are too narrow for Class II bicycle lanes and additional stenciling is needed to guide cyclists to ride outside the “door zone” alongside parked cars. Sharrows also provide increased awareness of motorists that cyclists may be present on the roadway.



Shared Roadway Bicycle Marking

3.2.3 Signing

Implementing a well-planned, attractive, and effective system of network signing greatly enhances bikeway facilities by promoting their presence to both potential and existing users. Signing helps increase the bicycle mode split by leading people to both on-street and off-street county bikeways and the safe and efficient transportation and recreation they offer to local residents and visitors. In particular, multi-use paths require additional standardized signs and stencils in order to help manage different user groups such as bicyclists, the disabled and pedestrians, who may arrive on foot or rollerblade with strollers or pets.

Currently Nevada County has only a few standard bike route signs, mostly at local street connections and decision points. No continuous routes are identified.

3.2.4 Maintenance

Maintenance of bikeway facilities is a critical and often overlooked element of bikeway planning. Bikeway maintenance is divided into two categories, routine maintenance and major maintenance. Major maintenance consists of projects with greater capital funding needs, such as pathway reconstruction, shoulder maintenance or repaving of a bicycle lane as a part of roadway repaving. Routine maintenance consists of such activities as sweeping bike lanes and paths and restriping and replacing stencils, lines and signage. In Nevada County, such routine activities are conducted on an ongoing basis at the same time as regular roadway maintenance such as street sweeping and repainting roadway lane lines and crosswalks and replacing missing or damaged street signage. In western Nevada County, the Town of Truckee has particular maintenance challenges posed by heavier snowfall which, combined with snow plows and sand tends to obliterate bicycle lane striping and stenciling within a year of installation. Further, snow removal practices have not yet been developed for the bicycle lane, shoulder and pathway facilities that some residents would use for year-round bicycling were they clear.

3.2.5 Bikeway Support Facilities

In a nationwide Harris Poll conducted in 1991, almost half the respondents stated that they would sometimes commute to work by bicycle, or commute more often, if there were showers, lockers, and secure bicycle storage at work.

Cyclists' needs for bicycle parking range from simply a convenient piece of street furniture, to storage in a bicycle locker that affords weather, theft and vandalism protection, gear storage space,

and 24-hour personal access. Most bicycles today cost 350 dollars to over 2,000 dollars and are one of the top stolen items in all communities. Theft can be a serious deterrent to riding, especially for low-income riders or those with particularly expensive or rare bicycles. Where a cyclist's needs falls on this spectrum is determined by several factors:

- **Type of trip being made:** whether or not the bicycle will be left unattended all day or just for a few minutes.
- **Security of area:** determined by the cyclist's perception
- **Value of the bicycle:** the more a cyclist has invested in a bicycle, the more concern she or he will show for theft protection or how prone a given area is to bicycle theft.

Some potential commuting cyclists also need shower, locker, and changing rooms at trip destinations. For those cyclists needing to dress more formally, travel longer distances, or cycle during wet or hot weather, the ability to shower and change clothing can be as critical as secure, weather-protected bicycle storage.

Types of Bicycle Parking

Bicycle parking facilities in California are classified as follows:

Class I: Class I bicycle parking facilities (see **Figure 3-3**) accommodate employees, students, residents, commuters, and others expected to park more than two hours. This parking is to be provided in a secure, weather-protected manner and location. Class I bicycle parking will be either a bicycle locker, or a secure area like a 'bike corral' that may be accessed only by bicyclists.

Bike lockers are covered storage units that typically accommodate one or two bicycles per locker, and provide additional security and protection from the elements. These are typically located at large employment center, colleges, and transit stations.

Bike corrals can be found at schools, stadiums, special events, and other locations, and typically involve a movable fencing system that can safely store numerous bicycles. Either locking the enclosure or locating it near other activities so that it can be supervised provides security.

Class II: Class II bicycle parking facilities (see **Figure 3-4**) are best used to accommodate visitors, customers, messengers and others expected to depart within two hours. Bicycle racks provide support for the bicycle but do not have locking mechanisms. Racks are relatively low-cost devices that typically hold between two and eight bicycles, support the bicycle in two places, allow bicyclists to securely lock the frames and at least one wheel, are secured to the ground, and are located in highly visible areas with effective "passive surveillance". They are usually located at schools, commercial locations, and activity centers such as parks, libraries, retail locations, and civic centers. "Ladder" style racks which only support one wheel of the bicycle and "wave" or "ribbon" style racks which only support the bicycle at one point are not preferred.



"Ladder" and "Wave" or
"Ribbon" Style Bicycle Racks

Nevada County Existing Bicycle Parking and End-of-Trip Facilities

A February 2007 field review conducted by Nevada County Transportation Commission staff with the assistance of local volunteers revealed approximately 20 locations with existing bicycle parking throughout the western part of the county. Bicycle parking conditions in the Truckee area are unknown as of this writing. See the 2007 update of the *Truckee Trails and Bikeways Master Plan* for more information. Existing bicycle parking is located primarily at government buildings and public facilities as well as Sierra College and a number of shopping centers. In many cases, bicyclists visiting stores, restaurants, places of employment, and community facilities are left to their own devices to temporarily store their bicycles. At this time Nevada County does not have a program to offer bicycle racks for placement on the public right of way. Nevada County Zoning Regulations requires that parking lots with 20 or more vehicle spaces provide one bicycle rack per 20 spaces for new development (Section L-II 4.2.9.C.6 of Parking Standards). Bicycle racks must be designed to provide a minimum four bicycle spaces in each rack, so a bicycle can be locked to the rack. The number of required bicycle racks may be reduced if the Planning Agency determines that the use of the site does not warrant one bicycle rack for each 20 stalls. The following list describes the existing bicycle parking locations identified in February of 2007. See Figure 3-2 for bicycle parking locations.

- Briar Patch Co-op - ladder rack – 290 Sierra College Dr., Grass Valley, 95945
- California Organics - ladder rack – 135 Argall Wy., Nevada City, 95959
- Grass Valley municipal lot at Church Street between Neal and Main- ribbon style rack
- Back corner of lot Grass Valley municipal lot at Bank Street and South Auburn St. - ribbon style, near sidewalk
- Grass Valley municipal lot at N. Auburn and Richardson - ribbon style, back of lot near stairs to sidewalk
- Grass Valley City Hall parking lot - 6 class I enclosed lockers – 125 E. Main St., Grass Valley, 95945
- Rood Center - ladder rack – 950 Maiden Ave., Nevada City, 95959
- Madelyn Helling Library - ribbon style rack – 980 Helling Way., Nevada City, 95959
- Grass Valley library - ladder rack, better than most ladder racks – 207 Mill St., Grass Valley, 95945
- Unitarian Church on Walsh St - small ribbon rack
- Raleys on Freeman way - Wheel holder – 692 Freeman Ln., Grass Valley, 95949
- Northwest corner of Raleys lot on Freeman way - inverted U/ladder hybrid – 692 Freeman Ln., Grass Valley, 95949

- K-mart on McKnight way - ladder rack – *111 W. McKnight Way., Grass Valley, 95949*
- Grass Valley post office on Main St - ribbon style rack, - *185 E. Main St., Grass Valley, 95945*
- South Yuba Club – *555 Searles Ave., Nevada City, 95959*
- The Wildwood Business Center - 10 bicycle rack spaces - *11242 Pleasant Valley Rd, Penn Valley 95946*
- The Higgins Center - *Hwy 49 and Combie Road*
- Generations Fitness Center - 2 bicycle racks - *22824 Industrial Pl. Grass Valley, 95949*
- Gold Country Calvary Chapel - *13026 La Barr Meadows Rd, Grass Valley, CA*
- Prospector Nursery - *10003 Granholm Ln, Nevada City*
- Flour Garden in Brunswick Basin - wheel holder – *999 Sutton Way., Grass Valley, 95945*
- Sierra College - ladder racks in two locations – *250 Sierra College Dr., Grass Valley, 95945*
- Wild Mountain Yoga - ladder rack – *574 Searles Ave., Nevada City, CA 95959*
- Downtown Grass Valley – tree cages are used as defacto bicycle parking

No official shower or locker facility for bicycle commuters is known to exist in Nevada County. It is possible that some employers provide these facilities or that some bicycle commuters use facilities in health clubs or other establishments. The 1996 *Nevada County Bicycle Master Plan Update* stated a policy that encouraged employers to provide such facilities for commute cyclists.

The level of bicycle parking use at Nevada County's elementary and high schools is unknown at this time. As described above, two ladder-style racks are provided at the Sierra College campus in Grass Valley. School vandalism and theft of bicycles are due, in part, to poor placement of bicycle racks plus inadequate locking devices and techniques used by students. A lack of adequate racks can be a result of many factors, including the absence of a zoning code requirement for school bicycle parking, a perceived lack of need in some cases, and a view on the part of some school administrators and parents that bicycle riding is a low priority and/or unsafe means of transportation. A sample copy of a comprehensive bicycle parking ordinance is located in Appendix B.

Figure 3-3: Class I Bike Lockers

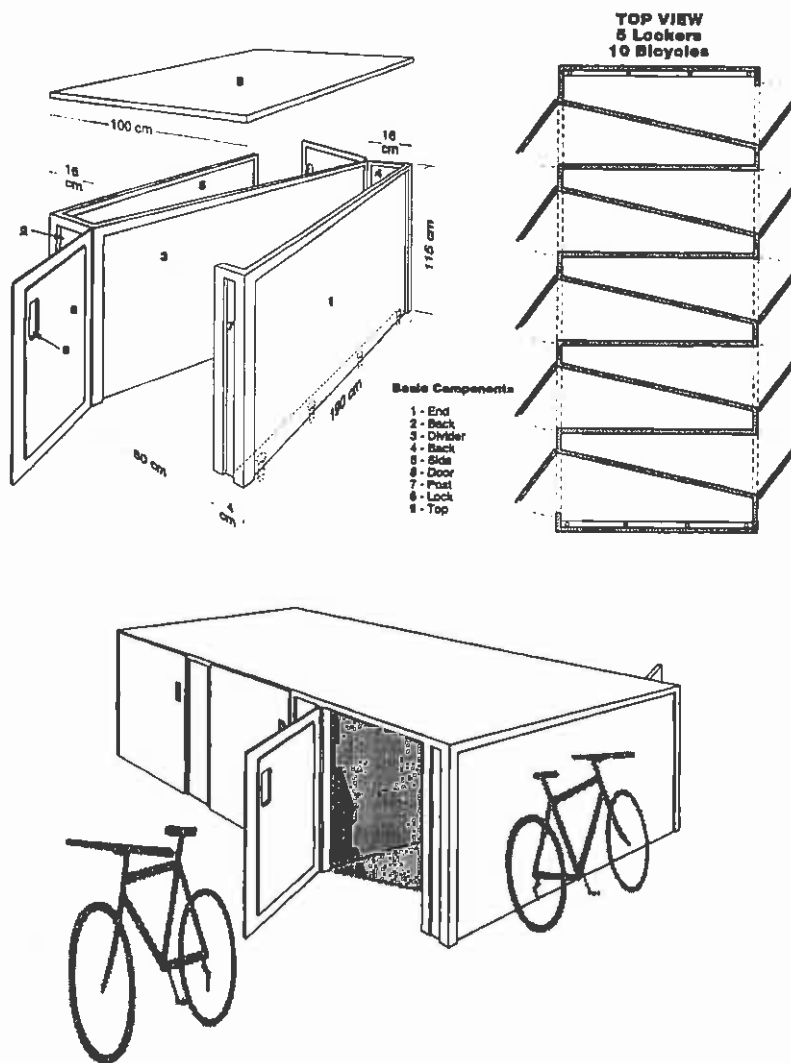
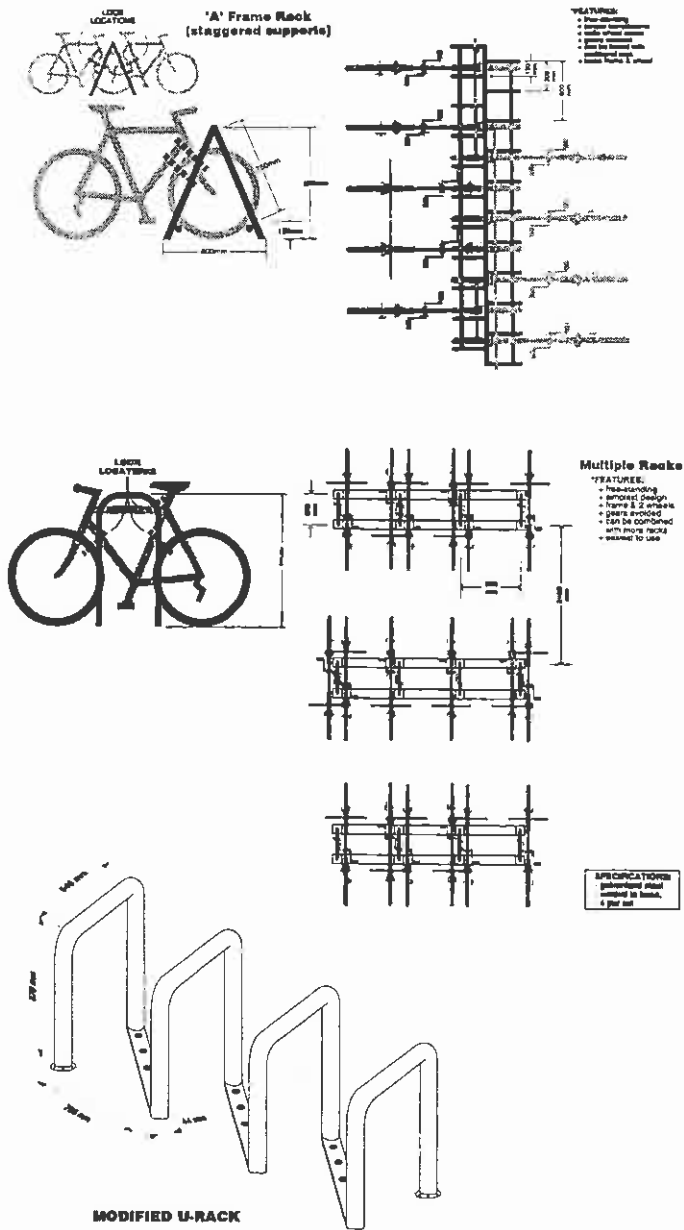


Figure 3-4: Class II Racks



3.3 Bicycle Safety Education Programs

Education is an important element in encouraging that increased bicycling also means safer bicycling. Although the most effective way to improve the safety of cycling is simply to improve the quality of Nevada County's bikeway facilities, bikeways cannot do it alone. There is also a need for proper education of both youth and adult cyclists and motorists. Education of all roadway user groups can address specific collision types common for bicycles. Among others, safety and education programs can take the form of Safe Routes to Schools in-class instruction, adult "Street Skills" classes that teach safe bicycle operation and "Share the Road" outreach that targets both motorists and cyclists equally. More details about proposed programs can be found in Chapter 5.

As reported by Nevada County Transportation Commission staff, the following table summarizes bicycle safety and education programs that were offered in Nevada County as of February 2007.

Table 3-3: Bicycle Safety Education Programs

| Agency (Program Name) | Contact Person | Program Functions |
|--|--|--|
| CHP - Grass Valley (Bicycle Safety Program) | David Qualls Phone: 273-4415 | <ul style="list-style-type: none"> The program organizes safety courses that include roadway and bicycle safety. The safety courses and seminars are mainly offered at grade schools (K-6) in Grass Valley and surrounding areas. The courses are usually offered on a need basis (i.e., when schools request safety courses and seminars). |
| CHP - Truckee (No Program Name) | John Sattler Phone: 587-3518 | <ul style="list-style-type: none"> The program organizes safety courses that include roadway and bicycle safety. The program also organizes bicycle rodeos. The safety courses and rodeos are mainly offered at schools (K-12) in the Truckee and North Lake Tahoe areas. The courses are usually offered on a need basis (i.e., when schools request safety courses and seminars). |
| Nevada County Sheriff Department (Cadet Program) | Rob Davenport Phone: 265-1370 | <ul style="list-style-type: none"> The program organizes safety courses that include roadway and bicycle safety. Occasionally, the program also organizes public workshops at shopping malls. The safety courses and rodeos are mainly offered at elementary schools. The courses are usually offered on a need basis (i.e., when schools request safety courses and seminars). |
| Nevada City Police (No Program Name) | Phone: 265-4700 | <ul style="list-style-type: none"> No program. |
| Grass Valley Police (No Program Name) | Captain Johnson Phone: 477-4600 | <ul style="list-style-type: none"> No program. |
| Alliance for People Powered Transportation (No Program Name) | Janelle Black foothillcycling@yahoo.com | <ul style="list-style-type: none"> Coordinate with the Grass Valley and Nevada City Police Departments and conduct 3-4 roadway and bicycle safety and education workshops a year. |

3.4 Multi-Modal Connections

Improving nonmotorized access to transit is an important part of making bicycling a part of daily life in Nevada County. Linking bicycles with public transit overcomes barriers such as trip distance, personal safety and security concerns, and riding at night, in poor weather, or up hills. This link also enables bicyclists to reach more distant areas for both recreation and transportation.

Bicycling to transit instead of driving benefits communities by reducing taxpayer costs, air pollution, demand for park-and-ride land, energy consumption and traffic congestion with relatively low cost investments.

There are four main components of bicycle-transit integration:

- allowing bicycles on transit;
- offering bicycle parking at transit locations;
- improving bikeways to transit within a three mile “catchment zone” radius
- encouraging usage of bicycle and transit programs.

About 0.76 percent of commuters to work use public transit in Nevada County. The Gold Country Stage is the County’s primary fixed-route transit provider and is operated by the Nevada County Department of Transportation and Sanitation. Existing Gold Country Stage public transit service in western Nevada County provides fixed-route service to most County communities including Grass Valley, Nevada City, Alta Sierra, Chicago Park, Lake of the Pines, Bitney Springs, Lake Wildwood, San Juan Ridge and Penn Valley as well as Auburn and Colfax in Placer County.

In addition to the above fixed-route system, additional transit service is provided in the Truckee area under contract to the Town of Truckee. Truckee Area Regional Transit (TART) and the Tahoe Trolley provide fixed route service between Truckee and nearby Lake Tahoe, ski resorts and recreational areas. Truckee Trolley provides limited fixed route service on an east-west route through town and to points east and west, as well as a dial-a-ride on-demand pickup service. TART buses can carry up to two bicycles at a time a front-mounted bicycle rack.

Currently, the entire fleet of Gold Country transit vehicles are equipped with one bike rack each carrying up to two bicycles at a time. Racks are usable at any time at the same fare rate as a regular passenger. Overflow bicycles are not allowed inside transit vehicles. Typically, bicycle parking facilities do not exist at bus stops along the transit routes unless those facilities serve a nearby land use such as a commercial, employment or educational center. Multi-modal transfer points may include park-and-ride lots or busy stops at locations such as the Sierra College campus or major shopping centers. Nevada County has one Caltrans-operated park-and-ride lot in Penn Valley at the intersection of Penn Valley Drive and Highway 20. This location does not provide bike lockers.

Figure 3-2 includes Gold Country Stage routes as well as bus stop multi-modal transfer locations. Potential improvements to Nevada County’s multi-modal services are described in Chapter 5.

3.5 Encouragement and Support Programs

3.5.1 Support Groups

Nevada County is home to at least 7 local bicycle shops and one bicycle industry company, Xtracycle Inc. There are at least three bicycle advocacy groups in Nevada County:

- The Alliance for People-Powered Transportation (APPT), based in the Nevada City-Grass Valley Area, promotes cycling and walking as means of transportation in western Nevada County through support, education, and advocacy. APPT promotes Bike to Work Day and partners with local law enforcement to provide bicycle safety education classes. The group also offers the League of American Bicyclists “Road I” bicycle skills course.
- The mission of the Truckee Trails Foundation, is to “provide the Truckee area with a network of trails and bike paths for fun, adventure, and alternative transportation” for all users groups, including residents, visitors and school-aged children. The group’s many activities include organizing volunteer trail work days, attending meetings to advocate for building bicycle facilities and holding fundraising events.
- The Bicyclists of Nevada County (BONC) are the local International Mountain Biking Association (IMBA) chapter. The group’s primary mission is to improve opportunities for recreational trail bicycling by promoting responsible mountain bicycling, preservation and improvement of riding opportunities, cooperation with other interests groups and the education of cyclists and non-cyclists alike. They regularly hold group rides and trail building and improvement events.
- The Sierra Express Bicycle Club is a volunteer organization that promotes all forms of cycling. The club was established in the early 1970’s and today promotes itself as a club for all road riders. The Sierra Express Bicycle Club promotes cycling at every level, with regularly scheduled training rides, weekend rides, and their annual century ride.

3.5.2 Events

Events are an excellent way to promote awareness of bicycling for transportation and recreation. Most bicycling events in Nevada County are organized by the above three advocacy groups and include the following:

- Bike to Work Day: organized by APPT, this event coordinates with the statewide bike to work day and features discounts for cyclists at participating cafes and shops as well as a raffle and party.
- Group rides (both road and mountain), volunteer days and special events: BONC, Truckee Trails Foundation and local clubs such as the Sierra Express Bicycle Club organize regular recreational rides at various locations throughout the county. These groups also organize volunteer days in partnership with local agencies as well as special events such as fundraisers.

4.0 NEEDS ANALYSIS

This section summarizes the bicycling needs in Nevada County that have been discussed in Chapter 3: Existing Conditions and identified by staff, the public and during field inspections. Specific projects and programs are addressed in Chapter 5.

According to a May 1991 Lou Harris Poll, it was reported that “...nearly three million adults—about one in 60—already commute by bike. This number could rise to 35 million if more bicycle friendly transportation systems existed.” In short, there is a large reservoir of potential bicyclists who do not ride (or ride more often) simply because they do not feel comfortable using the existing street system and/or don’t have appropriate bicycle facilities at their destination.

4.1 Commuter Bicycle Needs

A primary focus of this Plan is commuting cyclists—those riding to work or school, or for shopping, errands, and other utilitarian trips. It is important to understand the specific needs of bicycle commuters.

Commuter bicyclists in Nevada County range from employees who ride to work to a child who rides to school to people riding to shops. Bicycling requires shorter commutes, typically less than three miles, which runs counter to past housing trends in which residents live farther and farther from where they work, trends which may reverse if fuel and energy costs continue to increase. Access to transit helps extend the commute range of cyclists, but transit systems also face an increasingly dispersed live-work pattern that is difficult to serve. Despite these facts, Nevada County has a great potential to increase the number of people who ride to work or school because of (a) the small size of its three largest communities, (b) moderate density residential neighborhoods near downtown areas, (c) a favorable climate with at least three seasons of riding weather, and (d) a culture that values fitness and experience of the outdoors and nature as a part of daily life.

Commuters typically seek the most direct and fastest route available, with regular adult commuters often preferring to ride on arterials rather than side streets or off-street facilities. Rather than be directed to side streets, most of these cyclists would prefer to be given bike lanes or wider curb lanes on direct routes. Commuters generally prefer routes where they are required to stop as few times as possible, thereby minimizing delay.

Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with vehicles. Major commuter concerns include traffic congestion, changes in weather (rain), riding in darkness, personal safety and security. Places to safely store bicycles are of paramount importance to all bicycle commuters.

Many younger students (ages seven to 11) use sidewalks for riding to schools or parks, which is acceptable in areas where pedestrian volumes are low and driveway visibility is high. Where on-street parking and/or landscaping obscures visibility, sidewalk riders may be exposed to a higher incidence of accidents. Older students (12 years or older) who consistently ride at speeds over 10 miles per hour (mph) should be directed off sidewalks and onto streets or shared-use pathways wherever

possible. Students riding the wrong-way on-street are common and account for the greatest number of recorded accidents in California, pointing to the need for safety education.

4.2 Recreational Bicycle Needs

Although this plan is primarily focused on bicycle transportation, recreation has been identified as a key reason for bicycling in Nevada County. Many of the improvements in this plan are designed to serve both transportation and recreation cyclists who share the same routes on local paths and roadways. Specifically, needs for safer rural recreational road cycling routes and access to mountain bike opportunities have been identified. This plan addresses those needs through the countywide bikeway network detailed in Chapter 5.

4.3 Multi-Modal Mindset at the Design Stage

Staff and members of the public have noted the opportunity for improving the pedestrian environment through new development occurring in the growth areas of Nevada County. Some of the design concepts suggested include:

- Designs of new and retrofitted developments should provide equal accommodation for automobiles, bicycles and pedestrians.
- Mixed-use developments with integrated land uses could be encouraged, since they can foster more bicycle-friendly environments, generate less vehicle trips and create interesting places.
- In line with encouraging new approaches to development, codes might reflect that bikeways (bicycle lanes, routes or pathways) should be automatically required as a condition of new development or when it is anticipated that a road will attain a particular threshold with respect to either speeds or vehicle trips per day.
- A “park once” policy, in which centralized public parking facilities would be built to serve a given area, could be instituted in core areas such as downtown Grass Valley and Nevada City so as to reduce trips, conflicts between motor vehicles and bicycles and the overall number of parking spaces required.

4.4 Education and Awareness Building

Awareness of the needs of bicyclists should be incorporated into school programs through the use of bicycle safety courses. Additionally, education and bicycle awareness issues should be incorporated into Department of Motor Vehicle driver’s license tests. In addition to safety issues, the education materials should also include etiquette rules for road sharing between motor vehicles and other modes of transit.

4.5 Transit

Bicycling and transit can work together to provide regional transportation options to single-occupancy vehicle trips. As mentioned in Chapter 3, the Gold Country Stage and TART buses

currently provide front-mounted bicycle racks. Additional needs for bike-to-transit access include:

- Bicycle racks or storage on all buses serving Nevada County.
- Additional capacity for bicycle racks on buses. This would enable groups of cyclists to travel together to access recreational riding opportunities, reducing the need for parking near popular riding areas and at trailheads.
- Bicycle racks at route transfer hubs and selected bus stop locations.
- Wayfinding for cyclists to be able to find bus stops.

4.7 Public Outreach

4.7.1 Survey

Bicycle surveys were distributed to area bike shops and posted on the Nevada County Transportation Commission website. In addition, volunteers from local advocacy groups distributed the survey to their members.

To date, 144 respondents returned bicycle surveys. The results were as follows and are summarized in **Figures 4-1 through 4-7**. Percentages below reflect percent of total survey respondents only, not percent of the total cycling population or percent of the overall population of Nevada County, Grass Valley, Nevada City or Truckee.

- The largest group of respondents was from either Nevada City or Grass Valley (over 40%) with nearly 30% of respondents identified as being from Truckee. The remaining responses were fairly evenly distributed across the remaining smaller communities and neighborhoods such as Alta Sierra, Penn Valley and Glenshire. Of note were approximately 3% of respondents from locations in Placer County outside Truckee.
- According to respondents, most bicycling in Nevada County takes place for recreational and fitness purposes, with nearly equal numbers reporting road riding and mountain biking. A significant number of respondents indicated that they bicycle for errands (nearly half) or to work (over one third).
- The respondents are regular riders, with nearly 40% reporting riding three to four rides per week and nearly 25% reporting 5-6 rides per week. Over 25% of respondents reported average ride distances between 11 and 24 miles and nearly one quarter indicated that their average ride length is over 25 miles. Note that ride distance may be skewed lower by inclusion of mountain bike use in this data.
- Most respondents cited concerns with facilities as the main reason for not riding – either facilities are lacking or are in need of maintenance. Second to this was driver-related safety concerns associated with traffic volumes, speeds and failure to yield/”share the road”.
- In terms of facility preference separated bike paths ranked highest as the preferred facility type, with bike lanes and unpaved trails ranking third and fourth as preferred. Just under 15% preferred on-street bike routes.
- Almost no respondents indicated bicycling as a school commute mode, reflecting the serious

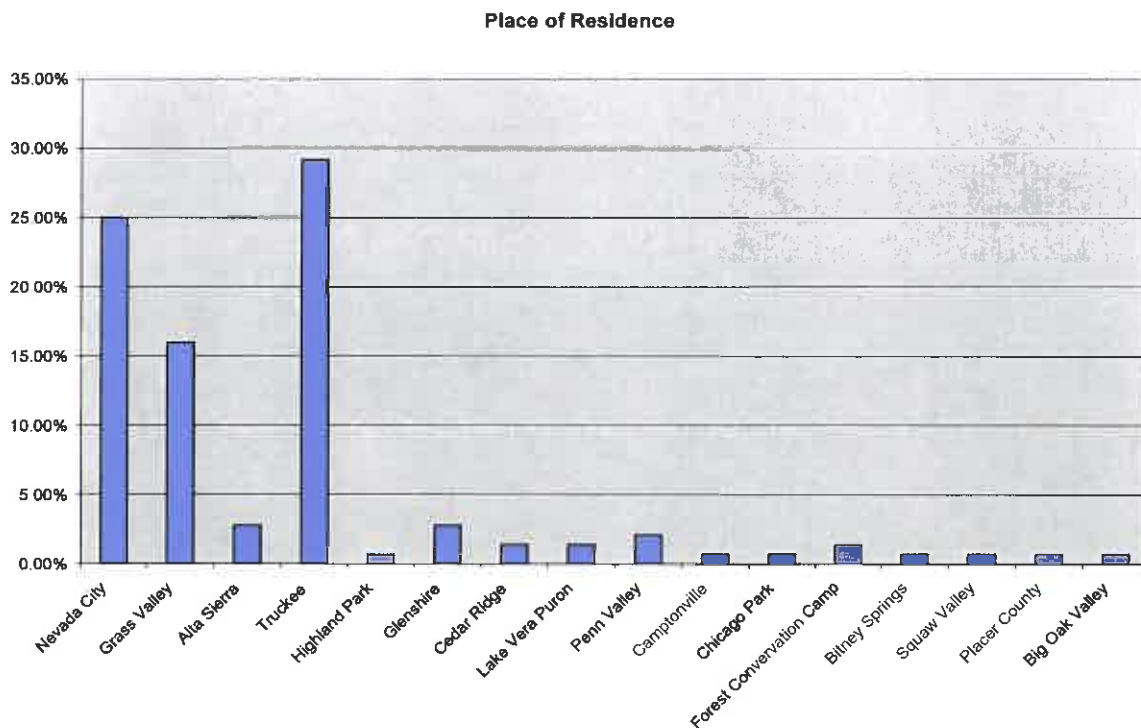
need for bicycle improvements in school areas.

4.7.2 Identified Needs

County staff and survey respondents suggested the needs listed below. The top priorities will be considered in more detail in Chapter Five.

- Safe bicycle connections within communities, specifically within downtown and along major arterials in Nevada City, Grass Valley and Truckee
- Safe bicycle connections between communities such as along Highway 49 between Nevada City, Grass Valley and Alta Sierra; Rough and Ready Highway between Grass Valley and Penn Valley; and along Highway 20/Donner Pass Road between Nevada City and Truckee
- Safety improvements such as warning signage and shoulder improvements to popular recreational rural routes such as Bitney Springs Road, McCourtney Road and Donner Pass Road
- Secure bicycle parking at destinations
- A designated space for bicycles, either a bicycle lane or wider shoulder or a pathway
- Regular maintenance and repaving of bicycle facilities and bicycle route roads, including shoulder areas
- Improved driver education and increased enforcement of dangerous driver behaviors

Figure 4-1: Place of Residence¹



¹ All chart percentages reflect percent of total survey respondents, not percent of the cycling population or percent of County, city or town residents.

Figure 4-2: Reasons for Bicycling

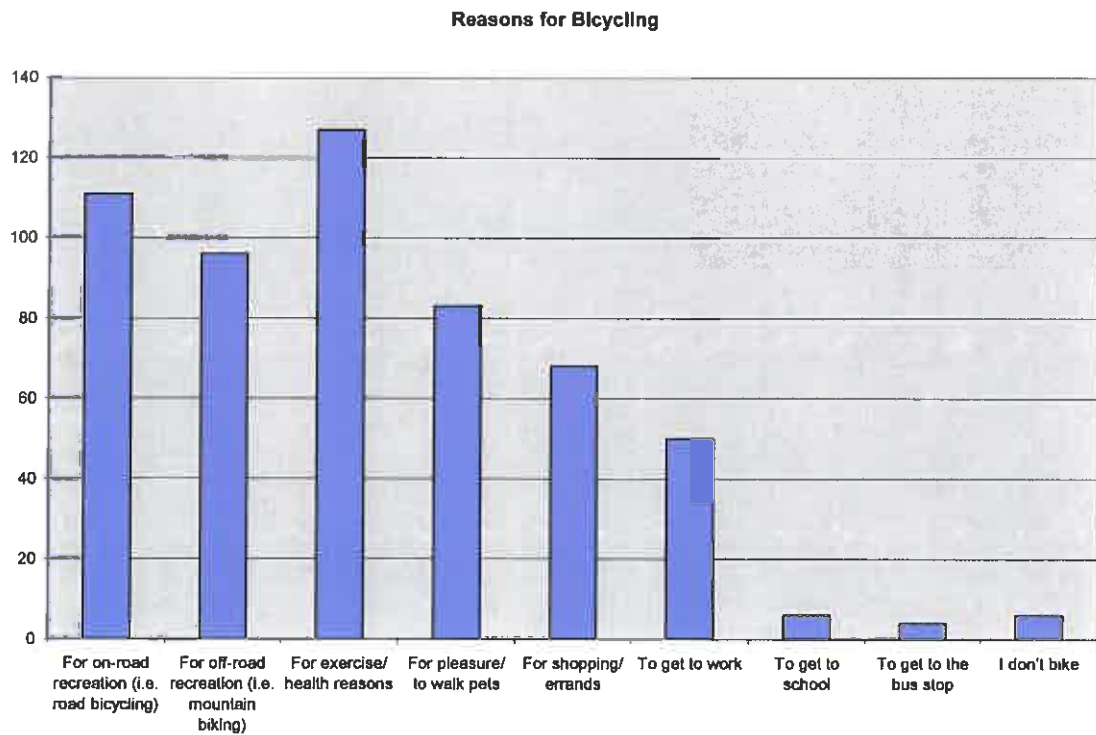


Figure 4-3: Number Days Riding Per Week

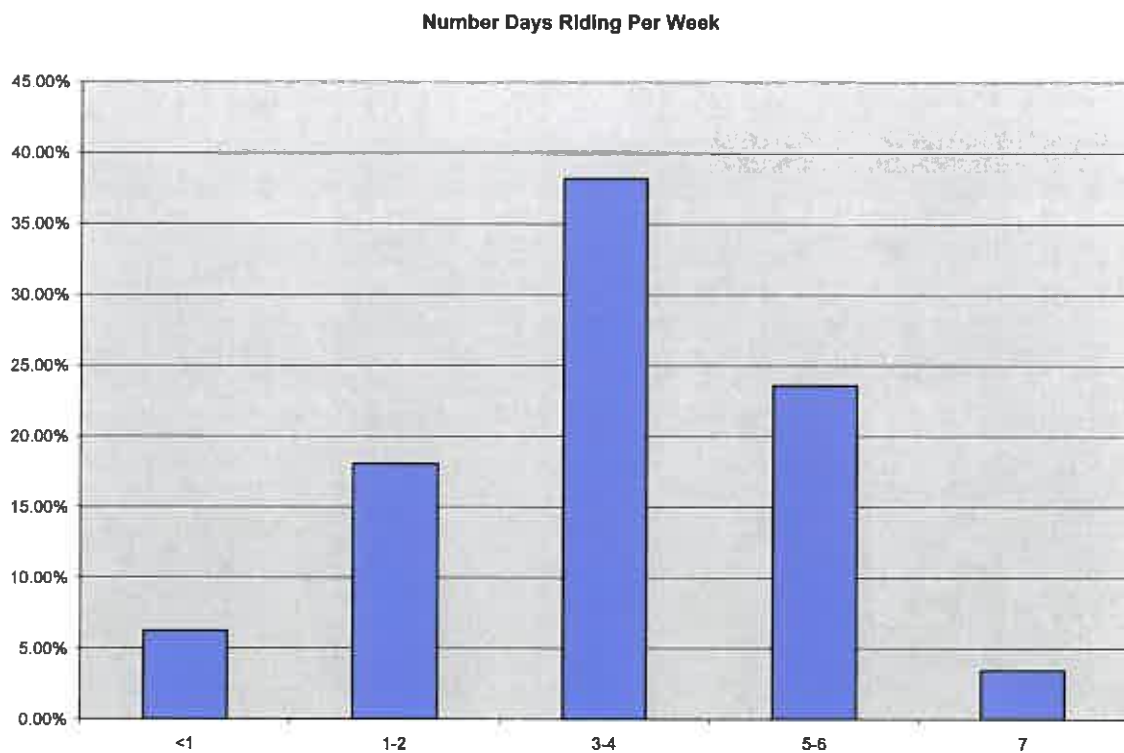


Figure 4-4: Average Ride Distance

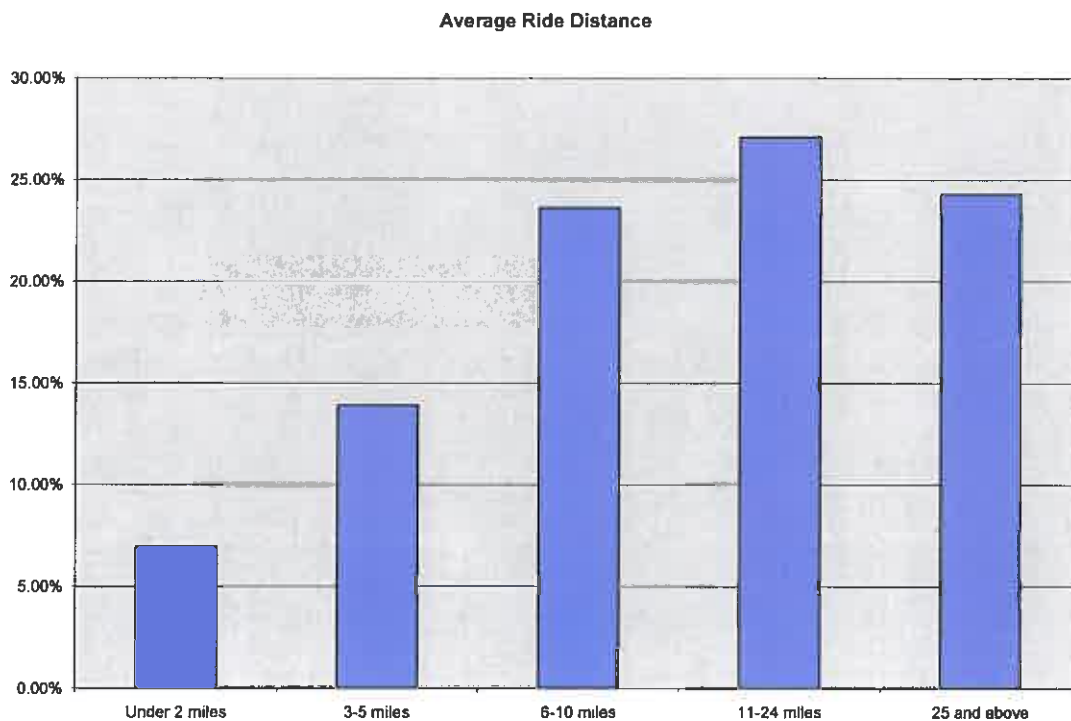


Figure 4-5: Obstacles to Bicycling

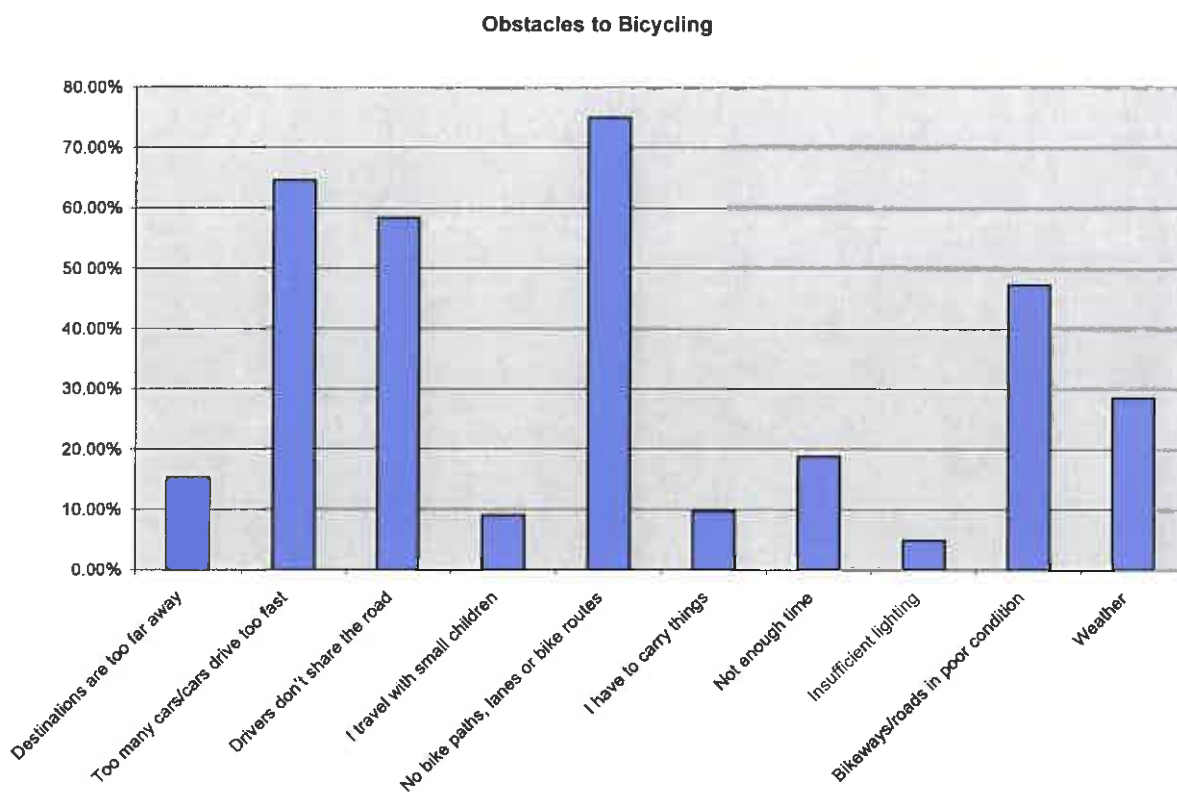
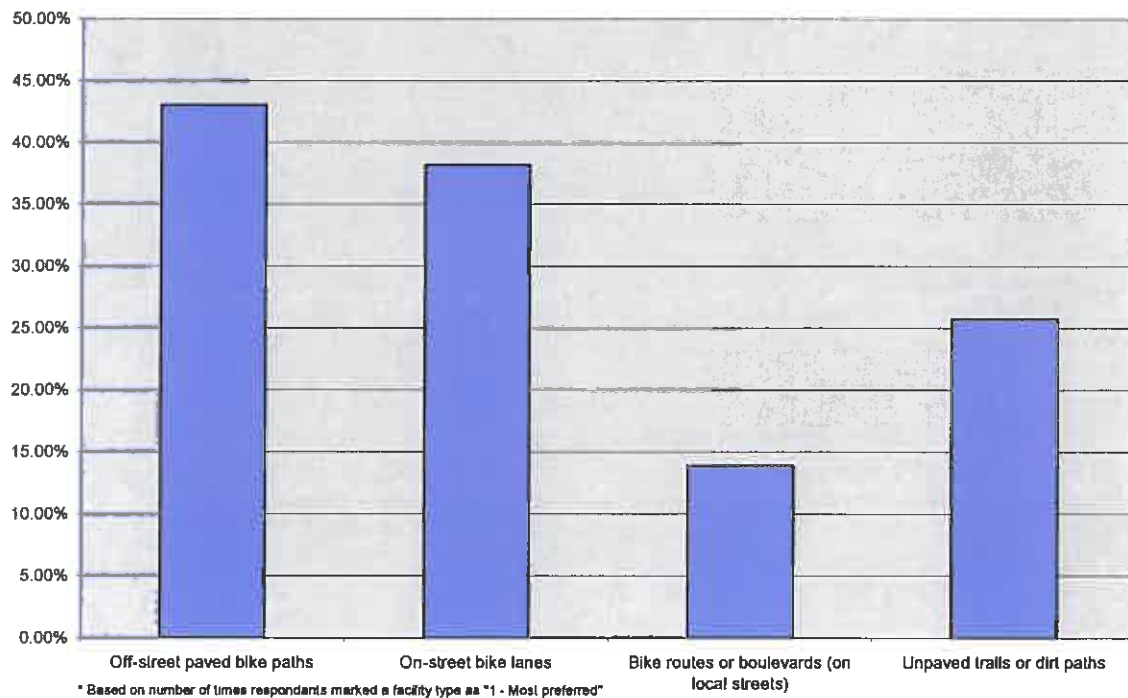
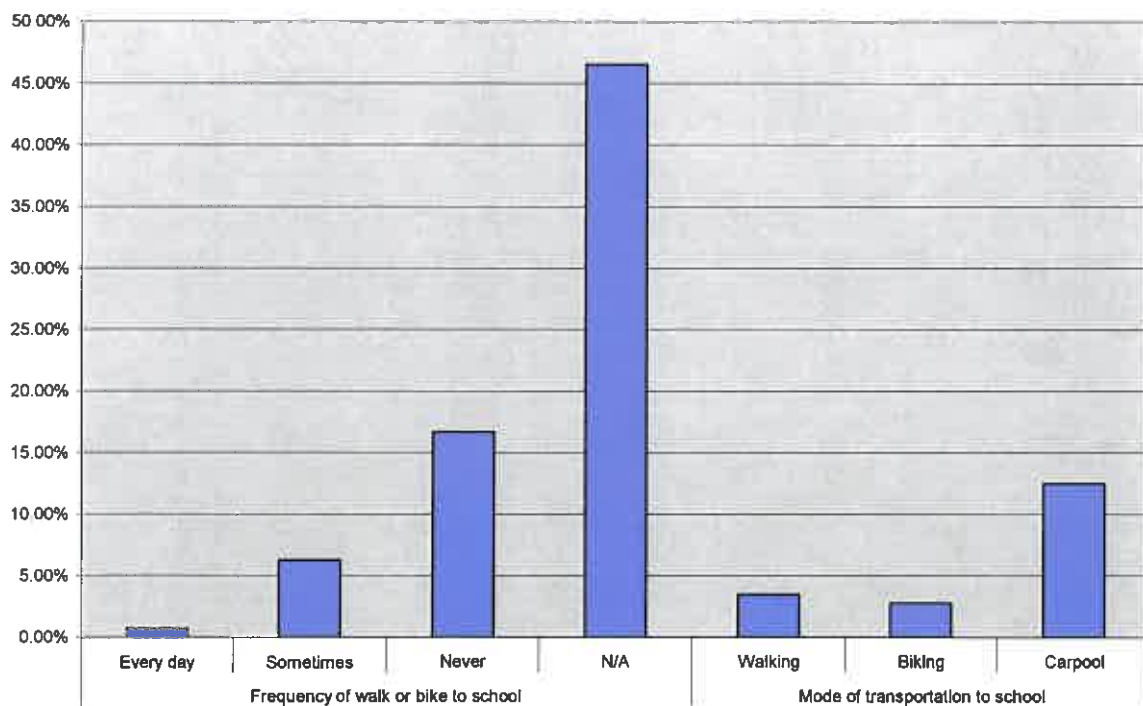


Figure 4-6: Most Preferred Facility Type**Facility Preference - Most Preferred Facility Types*****Figure 4-7: School Commute****School Commute**

4.8 Current Usage and Future Benefits

4.8.1 Bicycle Usage Data

Journey to work data was obtained from the 2000 US Census for Nevada County, California, and the United States. Journey to work data are shown in **Table 4-1**.

Table 4-1: Journey to Work Data

| Mode | | | Nevada County | |
|----------------|---------------|------------|---------------|------------------|
| | United States | California | % | Number of People |
| Bicycle | 0.4% | 0.9% | 0.27 | 103 |
| Walked | 3.0% | 3.0% | 2.88 | 1084 |
| Drove Alone | 78.3% | 74.7% | 81.61 | 30683 |
| Carpool | 12.6% | 15.1% | 13.75 | 5168 |
| Public Transit | 4.9% | 5.3% | 0.76 | 285 |
| Other | 0.5% | 1.1% | 0.50 | 188 |

Source: U.S. Census 2000

As shown, approximately 0.3% of Nevada County journey-to-work trips are made by bicycle. 103 home-based work trips for Nevada County residents are made by bicycle. This number is greater than the 0.2% mode split from the 1990 census data reported in the 1996 bicycle plan. This modest increase is not surprising given the overall lack of funding available in the ensuing years to implement the proposed bikeway system described in the 1996 plan. However, in the last 7 years additional bikeways have been constructed in Nevada County which may have increased bicycle use above levels reported in the 2000 Census data.

In addition, the data above is likely to be an underestimate of the true amount of biking in the County. Census data does not include the number of people who bicycle for recreation or for utilitarian purposes, students traveling to school, or commuters who travel from outside Nevada County. Census data also reflects only a person's dominant commute mode and does not count non-motorized trips that are part of another trip, for example a person who walks or bicycles to a transit station.

4.8.2 Future Usage and Benefits

A key goal of the Bicycle Master Plan is to maximize the number of local bicycle commuters in order to help reduce traffic congestion and air pollution. In order to set the framework for these benefits, national statistics and policies are used as a basis for determining the benefits to Nevada County. Currently, nearly three million adults (about one in 60) commute by bicycle. This number could rise to 35 million if adequate facilities were provided (according to a 1991 Lou Harris Poll). The latent "need" for bicycle and pedestrian facilities—versus actual bicyclists and pedestrians—is difficult to quantify. We must rely on evaluation of comparable communities to determine potential usage.

Bicycling is one of the most popular forms of recreational activity in the United States, with 46 percent of Americans bicycling for pleasure. If nothing else, this indicates a latent demand for

facilities and a potent constituency to push for better facilities. Another way of saying this is, “if you build it, they will come.”

Mode split refers to the choice of transportation people make whether for work or non-work trips. Currently, the average household in the U.S. generates about 10 vehicle trips per day. Work trips account for less than 30 percent of these trips on average. Using the available 2000 Census data, there are about 907 bicycle trips in Nevada County for utilitarian reasons on an average day.

Alta has developed a state-of-the-art bicycle demand model that also estimates future usage and cost benefits. This is the first model of its type to be based on empirical data. As shown in the following table, completion of the Countywide system could result in an estimated 2,887 daily bicyclists trips, saving approximately 9,695 vehicle miles daily. It is important to note that this is simply an order-of-magnitude estimate, based on available data.

Table 4-2 provides a detailed summary of bicycle demand and benefits, including estimated air quality savings from the increased bicycling.

Table 4-2: Estimated Bicycle Demand and Air Quality Benefits

| Current Commuting Statistics | | Source |
|--|--------|--|
| Nevada County Population | 92,033 | 2000 US Census |
| Number of Commuters | 37,597 | 2000 US Census (Employed persons minus those working at home) |
| Number of Bicycle-to-Work Commuters | 103 | 2000 US Census |
| Bicycle-to-Work Mode Share | 0.27% | Mode share percentage of Bicycle to Work Commuters |
| School Children Grades K-8 | 11,425 | 2000 US Census, population ages 5-14 |
| Estimated School Bicycle Commuters | 571 | Lamorinda School Commute Study (Fehr & Peers Associates, 1995) and San Diego County School Commute Study (1990). (5%) |
| Number of College Students | 4,524 | 2000 US Census |
| Estimated College Bicycle Commuters | 226 | National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995. Review of bicycle commute share in seven university communities (5%) |
| Average Weekday Gold Country Stage Ridership | 942 | Average of weekday system wide Gold Country Stage boardings based on monthly ridership in May 2006. |
| Number of Daily Bike-Golden County Stage Transit Users | 7 | GGT Existing Conditions System Levels Analysis Report 2005, Page 4-24 (0.7%) |
| Estimated Total Number of Bicycle Commuters and Utilitarian Riders | 907 | Total of bike-to-work, transit, school, college and utilitarian bicycle commuters. Does not include recreation. |
| Estimated Adjusted Mode Share | 1.0% | Estimated Bicycle Commuters divided by population |
| Estimated Current Bicycle Trips | | |
| Total Daily Bicycle Trips | 1,814 | Total bicycle commuters x 2 (for round trips) plus total number of utilitarian bicycle trips |
| Reduced Vehicle Trips per Weekday | 793 | Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children |
| Reduced Vehicle Miles per Weekday | 2,407 | Assumes average one-way trip travel length of 4.6 miles for adults/college students and 0.5 mile for schoolchildren |
| Potential Future Bicycle Commuters | | |
| Number of workers with commutes nine minutes or less | 6,552 | US Census 2000 |
| Number of workers who already bicycle or walk to work | 1,187 | US Census 2000 |

NEEDS ANALYSIS

| | | |
|--|-----------|---|
| Number of potential bicycle commuters | 5,365 | <i>Calculated by subtracting number of workers who already bicycle or walk from the number of workers who have commutes 9 minutes or less</i> |
| Future number of new bicycle commuters | 537 | <i>Based on capture rate goal of 10% of potential bicycle riders</i> |
| Total Future Daily Bicycle Commuters | 1,444 | <i>Current daily bicycle commuters plus future bicycle commuters</i> |
| Future Total Daily Bicycle Trips | 2,887 | <i>Total bicycle commuters x 2 (for round trips)</i> |
| Future Reduced Vehicle Trips per Weekday | 2,108 | <i>Assumes 73% of bicycle trips replace vehicle trips</i> |
| Future Reduced Vehicle Miles per Weekday | 9,695 | <i>Assumes average one-way trip travel length of 4.6 miles for adults. Assumes 12 mph average bicycle speed; 23 minute average travel time. Travel time data from NHTS 2001 Trends, Table 26.</i> |
| Future Reduced Vehicle Miles per Year | 2,569,133 | <i>256 weekdays per year</i> |
| Future Air Quality Benefits | | |
| Reduced HC (kg/weekday) | 27 | <i>(0.0028 kg/mile)</i> |
| Reduced CO (kg/weekday) | 203 | <i>(0.0209 kg/mile)</i> |
| Reduced NOX (kg/weekday) | 13 | <i>(0.00139 kg/mile)</i> |
| Reduced CO2 (kg/weekday) | 1,067,475 | <i>(.4155 kg/mile)</i> |
| Reduced HC (metric tons/year) | 7 | <i>1000 kg per metric ton; 256 weekdays/year</i> |
| Reduced CO (metric tons/year) | 52 | <i>1000 kg per metric ton; 256 weekdays/year</i> |
| Reduced NOX (metric tons/year) | 3 | <i>1000 kg per metric ton; 256 weekdays/year</i> |
| Reduced CO2 (metric tons/year) | 273,274 | <i>1000 kg per metric ton; 256 weekdays/year</i> |
| <i>Emissions rates from EPA report 420-F-00-013 "Emission Facts: Average Annual Emissions and Fuel Consumption for Passenger Cars and Light Trucks." 2000.</i> | | |